

REMARKS

Claims 1-41 are pending in this application. Claims 11-18 and 30-39 have been withdrawn from consideration and claims 1-10, 19-29, and 40-41 have been rejected.

Rejection under 35 U.S.C. § 112, ¶ 2

The Office has rejected claims 1-10, 19-29, 40 and 41 under 35 U.S.C. § 112, ¶2 as being indefinite for the reasons noted on pages 2-3 of the Office Action. Applicant respectfully traverses this rejection.

Applicant previously noted that the teachings of the prior art and the skilled artisan's interpretation of the phrase "thin gate oxide layer" are particularly relevant as to whether the Office has substantiated that the rejected claims are indefinite. Accordingly, Applicant submitted search results showing that at least 42 patents since 1976 have issued with "semiconductor" and "thin gate oxide layer" phrases in the claims. Those 42 patents included U.S. Patent No. 6,586,306 which contains a claim for making a semiconductor device, including the steps of forming a "thin gate oxide layer" in one region and a "thick gate oxide layer" in another region. In light of such evidence, Applicant submitted that the Office has not substantiated that the term "thin" gate oxide layer was indefinite.

Viewing these arguments,¹ the Office found them to be non-persuasive. The Office contends that merely citing 42 results of a search engines does not reflect what each of the 42

¹ Applicant submits that this information was not mere arguments as categorized by the Office, but actual evidence of what the Office has previously determined to be definite terminology.

underlying disclosures teach about this claim term. The Office maintains the rejection because the present specification does not teach any numeric limitations about the thickness of the gate oxide layer, which could be used as a reference point defining thin and thick. The Office cites to Nishida et al. (U.S. Patent No. 3789503) and Hsu et al. (U.S. Patent No. 6841821) as showing a difference of 1600 Angstroms between what each reference describes as a thin gate oxide layer. The Office concludes that it would be improper to assume a definite meaning for this term where multiple definitions are taught by the prior art.

It appears that the Office requires that for the claim term “thin gate oxide layer” to be definite, the present specification must contain a numerical range for the thickness of gate oxide layer. Applicant respectfully disagrees for several reasons that such a disclosure is needed for this claim term to be definite.

First, there exists no legal obligation for the Office’s requirement. A definiteness inquiry under 35 U.S.C. § 112, ¶2 is an objective determination made in the context of whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. The inquiry is, therefore, whether the claims set out and circumscribe a particular subject matter with a “reasonable” degree of clarity and particularity. Definiteness must be analyzed, not in a vacuum, but in light of: (i) the disclosure of the present application; (ii) the prior art; and (iii) the claim interpretation given by the skilled artisan at the time the invention was made. *See M.P.E.P. § 2173.02.*

The fact that claim language, including terms of degree (i.e., such as thin), may not be precise does not automatically render the claim indefinite. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). When a term of degree is used, the Office must first determine whether the specification provides some standard for measuring

that degree. But the inquiry does not conclude there. If such a standard is not present, the Office must inquire to whether the skilled artisan would still “reasonably” be apprised of the scope of the invention. *See M.P.E.P. § 2173.05(b)*. In examining the present application, The Office has merely stopped with the first inquiry and argued that “thin” is not definite because the standard for measuring the thickness is not present in the specification.

The second reason the Office’s argument fails is that the Office itself has previously issued claims with the exact same term where there existed no numerical range in the specification. The Office contends that despite at least 42 other instances of “thin gate oxide layer” existing in issued claims in a similar art, such evidence ignores what is taught in each of the disclosures underlying the issued claims. Assuming, *arguendo*, that the Office’s standard is correct (an assumption that Applicant traverses on the record), there still exist several instances where the Office has issued claims containing such a term when the specification gave no numerical ranges. The Office need look no further than the patent Applicant previously cited to the Office (U.S. Patent No. 6586306). Further, a cursory review of the previously cited 42 patents showed this was not an aberration: the Office also issued U.S. Patent No. 6124172 that contained the term “thin gate oxide layer” in the claims but without a numerical range for the thickness present in the specification.

The third reason the Office’s argument fails is a matter of proof. The Office’s reliance on these two patents is not legally or factually sufficient to support the Office’s argument of the existence of a wide disparity of thicknesses for a thin gate oxide layer. Legally, the time frame for inquiring about indefiniteness is—as noted above—at the time of the invention. In the present application, the “time of the invention” of the present application is currently based on the effective filing date of the application, or early 2001. Nishida et al. (1974), however, is much

earlier than this time frame by 27 years and Hsu et al. (2005) is later than this time frame by about 4 years.

More important is that the factual evidence of in these two patents fails to support the Office's arguments. As any skilled artisan can testify, the size and dimensions of semiconductor devices have been decreasing for many years.² Thus, the gate oxide thickness disclosed by Nishida et al. (in 1974) would be much different than the gate oxide thickness disclosed by Hsu et al. (in 2005), more than 30 years later. Indeed, the skilled artisan would have expected such a wide difference because of the trends in semiconductor technology.

Thus, the disclosures of 2 patents more than 30 years apart does not adequately show the teachings of the prior art (which must be considered when analyzing definiteness). It is no doubt likely that the Office could find more issued patents that contain varying ranges of gate oxide layers. But Applicant could presumably find additional issued claims containing "thin gate oxide layer" with no underlying numerical range in the specification within the population of these 42 patents. As well, Applicant could presumably find additional examples, e.g., by additional analysis and/or by changing the search parameters (i.e., not requiring "semiconductor" in the claim or searching on "thin gate oxide" and omitting layer).

The fourth reason the Office's argument fails is that the definiteness inquiry does not depend only on what different numerical ranges can be found in the prior art. The inquiry also must consider whether the skilled artisan would have understood whether this claim term sets out and circumscribes a particular subject matter with a "reasonable" degree of clarity and

² Indeed, this knowledge is known even outside the semiconductor art

particularity. To that end, Applicants has concurrently filed a 37 C.F.R. § 1.132 Declaration evidencing whether this standard has been met.

Thus, for these reasons as well as those of record, the Office has not shown that “thin gate oxide” would have been indefinite and Applicant respectfully requests withdrawal of this rejection.

Rejection under 35 U.S.C. § 102 over Murakami et al.

The Office has rejected claims 1-4, 7-10, 19, 23, 26, 27, and 29 under 35 U.S.C. § 102(b) as being anticipated by Murakami et al. (U.S. Patent No. 5,623,154) for the reasons detailed on pages 4-9 of the Office Action. Applicant respectfully traverses this rejection.

The Office argues that Murakami et al. teach the claimed invention pointing to various components of the device in Figure 1. Applicant respectfully disagrees that the Office has shown that the device in Figure 1 of Murakami et al. describes every limitation in the rejected claims.

The independent claims currently contain the limitation that the transistor has a current path between a source and a drain while containing no thin gate insulating layer. As described in paragraphs [11] and [32] of the specification, the transistor described in the present application contains an inversion layer (135) that provides a current path between the source and drain regions, yet without using a thin gate insulating layer, thereby protecting against ESD stress. The prior art devices (as illustrated in Figure 1) were unable to protect against the ESD stress because the thin gate insulating layer (19) in the transistor would break down. *See paragraphs [7] and [8] of the specification.*

The Office has not shown that Murakami et al. discloses this limitation in the rejected independent claims. This reference discloses an NMOS transistor 20 containing source and drain

regions 11, a gate oxide film 15, and a gate electrode layer 17. *See column 1, lines 25-50 and Figure 1.* As recognized by the skilled artisan, the gate oxide film 15 would classify as a thin gate insulating layer. Based on the structure of the NMOS transistor depicted in Figure 1, it would be difficult for the Office to substantiate that Murakami et al. disclose a transistor with the features presently claimed.

Further, the Office argues that Murakami et al. describe a field transistor with the claimed features and containing “no gate insulating layer.” *See Office Action*, ¶3. But this is not what the claims recite. The rejected claims recite “no thin gate insulating layer.” In essence, the Office ignores the presence of the term “thin,” presumably because of the indefiniteness rejection. But the Office can not eliminate this term from the claim when rejecting the claims over Murakami et al.

All words in a claim must be considered in judging the patentability of a claim against the prior art. *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). Where the degree of uncertainty about the definiteness of a claim term is not great, the Office should reject the claims based on indefiniteness and based on prior art, but “based on the interpretation of the claims which renders the prior art applicable.” *See M.P.E.P. § 2173.06; cf Ex parte Ionescu*, 222 USPQ 537 (Bd. App. 1984). When making a rejection over prior art in these circumstances, it is important for the Office to point out how the claim is being interpreted. *See M.P.E.P. § 2173.06.* But nowhere is the Office allowed to ignore the claim term altogether.

Accordingly, the Office has not shown that Murakami et al. teach each and every limitation in the rejected claims and Applicant respectfully requests withdrawal of this ground of rejection. Alternatively, Applicant requests repetition of the rejection in accordance with M.P.E.P. § 2173.06.

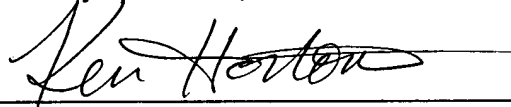
CONCLUSION

For the above reasons, as well as those of record, Applicant respectfully requests the Office to withdraw the pending grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Request, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 50-0843.

Respectfully Submitted,

By

A handwritten signature in cursive script, appearing to read "Ken Horton", written over a horizontal line.

KENNETH E. HORTON

Reg. No. 39,481

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